

Safety Data Sheet

Miller's Elastin Stain

Section 1 - Chemical Product and Company Identification

SDS Name: Miller's Elastin Stain

Catalog Numbers: SO-709

Company Identification: Transene Company, Inc., DBA ROWLEY BIOCHEMICAL, Inc.
10 ELECTRONICS AVENUE
DANVERS, MA 01923

For information, call: 978-739-4883

Emergency Number: 800-424-9300

For CHEMTREC assistance, call: 800-424-9300

Section 2 - Hazards Identification

GHS Classifications

H225-Flammable liquids: 2

H290-Corrosive to metals: 1

H302-Acute toxicity, oral: 4

H313-Acute toxicity, dermal: 5

H314-Skin corrosion/irritation: 1B

H317-Sensitisation, skin: 1

H318-Serious eye damage/eye irritation: 1

H332-Acute toxicity, inhalation: 4

H335-Specific target organ toxicity, single exposure; Respiratory tract irritation: 3

H350-Carcinogenicity: 1B

H370-Specific target organ toxicity, single exposure: 1

H372-Specific target organ toxicity, repeated exposure: 1

1.5% of the mixture consists of ingredients of unknown acute oral toxicity.

2% of the mixture consists of ingredients of unknown acute dermal toxicity.

9.4% of the mixture consists of ingredients of unknown acute inhalation toxicity.

Pictograms or Hazard symbols and Hazard statement(s):



Signal Word: Danger

Hazard statements:

H225-Highly flammable liquid and vapour
H290-May be corrosive to metals
H302-Harmful if swallowed
H313-May be harmful in contact with skin
H314-Causes severe skin burns and eye damage
H317-May cause an allergic skin reaction
H318-Causes serious eye damage
H332-Harmful if inhaled
H335-May cause respiratory irritation
H350-May cause cancer
H370-Causes damage to organs (target organs: respiratory system, central nervous system, and optic nerve).
H372-Causes damage to organs through prolonged or repeated exposure (target organs: kidney, liver, spleen, and blood).

Precautionary Statements:

P201-Obtain special instructions before use.
P202-Do not handle until all safety precautions have been read and understood.
P210-Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233-Keep container tightly closed.
P234-Keep only in original packaging.
P240-Ground and bond container and receiving equipment.
P241-Use explosion-proof electrical/ventilating/lighting equipment.
P242-Use non-sparking tools.
P243-Take action to prevent static discharges.
P260-Do not breathe dust/fume/gas/mist/vapours/spray.
P261-Avoid breathing dust/fume/gas/mist/vapours/spray.
P264-Wash thoroughly after handling.
P270-Do not eat, drink, or smoke when using this product.
P271-Use only outdoors or in a well-ventilated area.
P272-Contaminated work clothing should not be allowed out of the workplace.
P280-Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312-If swallowed: Call a Poison Center/doctor if you feel unwell.
P301+P330+P331-If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P312-If on skin: Call a Poison Center/doctor if you feel unwell.
P302+P352-If on skin: Wash with plenty of soap and water.
P303+P361+P353-If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340-If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338-If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311-If exposed or concerned: Call a Poison Center/doctor.
P308+P313-If exposed or concerned: Get medical advice/attention.
P310-Immediately call a Poison Center/doctor.
P312-Call a Poison Center/doctor if you feel unwell.
P314-Get medical advice/attention if you feel unwell.
P330-Rinse mouth.
P333+P313-If skin irritation or rash occurs: Get medical advice/attention.
P362+P364-Take off contaminated clothing and wash it before reuse.
P363-Wash contaminated clothing before reuse.
P370+P378-In case of fire: Use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam to extinguish.

P390-Absorb spillage to prevent material damage.
P403+P233-Store in well-ventilated place. Keep container tightly closed.
P403+P235-Store in a well-ventilated place. Keep cool.
P405-Store locked up.
P406-Store in a corrosion resistant container with a resistant inner liner.
P501-Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
10025-77-1	Ferric Chloride Hexahydrate	7.4 w/v
2185-87-7	Victoria Blue 4R	0.5 w/v
3248-91-7	New Fuchsin	0.5 w/v
548-62-9	Crystal Violet	0.5 w/v
108-46-3	Resorcinol	2 w/v
9004-53-9	Dextrin	0.5 w/v
7647-01-0	Hydrochloric acid 36-38%	1.0 v/v
64-17-5	Ethyl alcohol	89.4 v/v
67-56-1	Methyl alcohol	4.7 v/v
7732-18-5	Water	Balance

Section 4 - First Aid Measures

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Corrosive to the naked eye. May cause permanent eye damage or blindness. Seek immediate medical attention.

Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Seek immediate medical attention. May cause deep and penetrating burns. May cause an allergic skin reaction.

Oral Exposure: If swallowed, seek immediate medical advice. Do not induce vomiting. Rinse mouth with water. May cause severe burns to the mouth and digestive tract.

Inhalation Exposure: If inhaled, remove to fresh air. Seek immediate medical attention.

Section 5 - Fire Fighting Measures

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers

may explode in the heat of a fire.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides, iron oxides, chlorine, hydrogen chloride gas, hydrogen gas, chlorine fumes, formaldehyde, irritating and toxic fumes and gases.

Flash Point: Not available

Autoignition Temperature: Not available

Explosion Limits, Lower: Not available

Upper: Not available

NFPA Rating: (estimated) Health: 3; Flammability: 4; Instability: 0

NOTE: Static discharge could act as an ignition source.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):

Wear personal protective equipment. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Ensure adequate ventilation. Keep away from heat. Eliminate all sources of ignition.

Methods for Cleaning up: Absorb with inert material such as sand, earth, or vermiculite. Do NOT absorb with combustible material such as saw dust or cellulosic material. Carefully sweep up and containerize for proper disposal. Use only non-sparking tools. Use explosion-proof equipment and take precautionary measures against static discharge. Do not release to the environment. Do not release to drains.

Section 7 - Handling and Storage

Use care when handling. Wear personal protective equipment. Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Store in a cool, dry, and well-ventilated area. Keep in a tightly closed and non-metal container. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting equipment. Use proper grounding procedures to avoid static electricity. Keep away from incompatible materials. Keep away from water or moist air. Protect from direct sunlight. Protect from heat. Vapors heavier than air may travel considerable distance and ignite or explode.

NOTE: Static discharge could act as an ignition source. Attacks metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Do not use metal containers.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Exposure Limits:

Chemical Name	ACGIH - TLV	NIOSH - IDLH	OSHA - Final PELs
Ferric Chloride Hexahydrate CAS#10025-77-1	1 mg/m ³ TWA	1 mg/m ³ TWA	1 mg/m ³ TWA
Victoria Blue 4R CAS#2185-87-7	Not listed	Not listed	Not listed
New Fuchsin CAS#3428-91-7	Not listed	Not listed	Not listed
Crystal Violet CAS#548-62-9	Not listed	Not listed	Not listed
Resorcinol CAS#108-46-3	10 ppm TWA 20 ppm STEL	10 ppm TWA 45 mg/m ³ TWA 20 ppm STEL 90 mg/m ³ STEL	Not listed
Dextrin CAS#9004-53-9	Not listed	Not listed	Not listed
Hydrochloric Acid CAS#7647-01-0	2 ppm Ceiling	5 ppm Ceiling 7 mg/m ³ Ceiling 50 ppm IDLH	5 ppm Ceiling 7 mg/m ³ Ceiling
Ethanol CAS#64-17-5	1000 ppm STEL	1000 ppm TWA 1900 mg/m ³ TWA 3300 ppm IDLH	1000 ppm TWA 1900 mg/m ³ TWA
Methanol CAS#67-56-1	200 ppm TWA 250 ppm STEL	200 ppm TWA 260 mg/m ³ TWA 250 ppm STEL 325 mg/m ³ STEL 6000 ppm IDLH	200 ppm TWA 260 mg/m ³ TWA

OSHA Vacated PELs: Hydrochloric Acid: 5 ppm Ceiling; 7 mg/m³ Ceiling
 Ethanol: 1000 ppm TWA; 1900 mg/m³ TWA
 Methanol: 200 ppm TWA; 260 mg/m³ TWA; 250 ppm STEL; 325 mg/m³ STEL

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: Dark blue-black
Odor: Alcohol-like
Vapor Pressure: Not available
Odor Threshold: Not available
Vapor Density: Not available
pH: Not available
Relative Density: Not available
Melting point/freezing point: Not available
Solubility: Soluble in water
Boiling Point: Not available
Flash Point: Not available
Evaporation Rate: Not available
Flammability (solid, gas): Not available
Partition coefficient: n-octanol/water: Not available
Autoignition Temperature: Not available
Decomposition Temperature: Not available
Viscosity: Not available
Specific Gravity/Density: Not available

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Reacts violently with oxidizers: Risk of fire/explosion.

Conditions to Avoid: Avoid direct sunlight and extremely high or low temperatures. Avoid all possible sources of ignition (spark or flame). Keep away from hot surfaces and avoid incompatible materials. Direct sunlight.

Incompatibilities with Other Materials: Strong oxidizing agents, acids, bases, reducing agents, sulfides, sulfites, formaldehyde, sodium hypochlorite, amines, cyanides, alkalis, permanganates, fluorine, hydroxides, carbonates, metal acetylides, metals, metal oxides, alkali metals, mild steel metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, and potassium dioxide.

Hazardous Decomposition Products: Carbon oxides, nitrogen oxides, iron oxides, chlorine, hydrogen chloride gas, hydrogen gas, chlorine fumes, formaldehyde, irritating and toxic fumes and gases.

Section 11 - Toxicological Information

CAS#10025-77-1 Ferric Chloride Hexahydrate: RTECS#: NO5425000

LD50 Oral: 316 mg/kg (rat)

LD50 Dermal: >2000 mg/kg (rat)

LC50 Inhalation: Not available

Carcinogenicity: Ferric Chloride Hexahydrate CAS#10025-77-1 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

CAS#2185-87-7 Victoria Blue 4R:

LD50 Oral: Not available
LD50 Dermal: Not available
LC50 Inhalation: Not available

Carcinogenicity: Victoria Blue 4R CAS#2185-87-7 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

CAS#3248-91-7 New Fuchsin:

LD50 Oral: Not available
LD50 Dermal: Not available
LC50 Inhalation: Not available

Carcinogenicity: New Fuchsin CAS3248-91-7 is not listed by NTP, ACGIH, OSHA, or California Prop. 65. New Fuchsin is listed by IARC (Group 2B, Possibly Carcinogenic to Humans).

CAS#548-62-9 Crystal Violet:

LD50 Oral: 420 mg/kg (rat)
LD50 Dermal: Not available
LC50 Inhalation: Not available

Carcinogenicity: Crystal Violet CAS#548-62-9 is not listed by NTP, ACGIH, OSHA, or California Prop. 65. Crystal Violet is listed by IARC (Group 2B, Possibly Carcinogenic to Humans.)

CAS#108-46-3 Resorcinol: RTECS#: VG9625000

LD50 Oral: 510 mg/kg (rat)
LD50 Dermal: 2830 mg/kg (rabbit)
LC50 Inhalation: 21.3 mg/L 1h (rat)

Carcinogenicity: Resorcinol CAS#108-46-3 is not listed by NTP, OSHA, or California Prop. 65. Resorcinol is listed by IARC (Group 3, Not Classifiable as to its Carcinogenicity to Humans), and ACGIH (A4, Not Classifiable as a Human Carcinogen).

CAS#9004-53-9 Dextrin: RTECS#: HH9450000

LD50 Oral: Not available
LD50 Dermal: Not available
LC50 Inhalation: Not available

Carcinogenicity: Dextrin CAS#9004-53-9 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

CAS#7647-01-0 Hydrochloric Acid: RTECS#: MW4025000

LD50 Oral: 238-277 mg/kg (rat)
LD50 Dermal: >5010 mg/kg (rabbit)
LC50 Inhalation: 1.68 mg/L 1h (rat)

Carcinogenicity: Hydrochloric Acid CAS#7647-01-0 is not listed by NTP, ACGIH, OSHA, or California Prop. 65. Hydrochloric Acid is listed by IARC (Group 3, Not Classifiable as to its Carcinogenicity to Humans).

CAS#64-17-5 Ethyl Alcohol: RTECS#: KQ6300000

LD50 Oral: 10470 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: 124.7 mg/L (rat) 4h

Carcinogenicity: Ethyl Alcohol CAS#64-17-5 is not listed by OSHA. Ethyl Alcohol is listed by IARC (Group 1, Carcinogenic to Humans), NTP (Known Carcinogen), and ACGIH (A3, Animal Carcinogen). Ethyl Alcohol is listed by California Prop. 65 as a developmental carcinogen (alcoholic beverages only).

CAS#67-56-1 Methyl Alcohol: RTECS#: PC1400000

LD50 Oral: 100.1 mg/kg (expert judgement)

LD50 Dermal: 300.1 mg/kg (expert judgement)

LC50 Inhalation: 3.1 mg/L 4h (expert judgement)

Carcinogenicity: Methyl Alcohol CAS#67-56-1 is not listed by IARC, NTP, ACGIH, or OSHA. Methyl Alcohol is listed by California Prop. 65 as a developmental carcinogen.

Information on the likely routes of exposure: Routes of entry anticipated: oral, dermal, inhalation, and eye.

Epidemiology: Not available.

Teratogenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects: Not available.

Neurotoxicity: Not available.

Mutagenicity: May affect genetic material (Resorcinol has been shown to cause mutations in microorganisms). Hydrochloric acid has been investigated for germ cell mutagenicity in animal studies.

Specific Organ Toxicity, Single Exposure: Respiratory system, central nervous system, and optic nerve.

Specific Organ Toxicity, Repeated Exposure: Kidney, liver, spleen, and blood.

Symptoms associated with exposure: If ingested, causes severe burns of the mouth and throat, danger of perforation of the esophagus and stomach. If inhaled, mucosal irritations, cough, shortness of breath, and damage to the respiratory tract. Causes serious eye damage, pain, watering, redness, and risk of blindness. Corrosive material. Skin contact may cause severe burns, redness, pain, deep ulcers, skin discoloration, dryness, cracking. Causes burns by all exposure routes. Causes damage to organs if in contact with skin, if inhaled or if swallowed. May cause sensitization by skin contact. Symptoms of an allergic skin reaction may include rash, itching, swelling, difficulty breathing, tingling of the hands/feet, dizziness, lightheadedness, chest pain, muscle pain, flushing. May cause cancer. Overexposure may lead to headache, dizziness, tiredness, nausea, vomiting.

The toxicological properties of this material have not been thoroughly investigated.

Section 12 - Ecological Information

Ecotoxicity: Do not release to the environment. Do not release to drains. Toxic to aquatic life. May cause long-term adverse effects to the environment.

CAS#10025-77-1 Ferric Chloride Hexahydrate:

EC50, water flea: 9.6 mg/L 48h static (daphnia magna)

CAS#548-62-9 Crystal Violet:

EC50, water flea: >0.24-<0.5 mg/L 48h static (daphnia magna)

ErC50, algae: >0.2-<0.8 mg/L 72h static (pseudokirchneriella subcapitata)(green algae)

CAS#108-46-3 Resorcinol:

LC50, freshwater fish: 29.5 mg/L 96h flow-through (pimephales promelas)(fathead minnow)

LC50, freshwater fish: 260 mg/L 60d (oncorhynchus mykiss)(rainbow trout)

LC50, water flea: 1 mg/L 48h semi-static (daphnia magna)

ErC50, algae: 97 mg/L 72h static (pseudokirchneriella subcapitata)(green algae)

EC50, bacteria: 79 mg/L 3h (activated sludge)

CAS#7647-01-0 Hydrochloric Acid:

LC50, freshwater fish: 282 mg/L 96h (gambusia affinis)(mosquito fish)

LC50, freshwater fish: 862 mg/L (leuciscus idus)(golden orfe)

EC50, water flea: 56 mg/L 72h (daphnia magna)

CAS#64-17-5 Ethyl Alcohol:

EC50, freshwater algae: 275 mg/L 72h (chlorella vulgaris)

LC50, freshwater fish: 14200 mg/L 96h (pimephales promelas)(fathead minnow)

EC50, water flea: 9268 mg/L 48h

EC50, water flea: 10800 mg/L 24h

EC50, microtox: 34634 mg/L 30min (photobacterium phosphoreum)

EC50, microtox: 35470 mg/L 5min (photobacterium phosphoreum)

CAS#67-56-1 Methyl Alcohol:

LC50, freshwater fish: >10000 mg/L 96h (pimephales promelas)(fathead minnow)

EC50, water flea: >10000 mg/L 24 h

ErC50, algae: 22000 mg/L 96h static (pseudokirchneriella subcapitata)(green algae)

IC50, bacteria: >1000 mg/L 3h static (activated sludge)

EC50, microtox: 39000 mg/L 25min

EC50, microtox: 40000 mg/L 15min

EC50, microtox: 43000 mg/L 5min

Persistence and degradability: Persistence is unlikely based on available information.

Bio-accumulative potential: Not available.

Mobility: Will likely be mobile in the environment due to its water solubility and volatility.

Section 13 - Disposal Considerations

DISPOSAL: Dispose of in accordance with all federal, state, and local regulations.

Section 14 – Transport Information

DOT

Proper shipping name: Flammable Liquids, Corrosive, N.O.S. (SD Alcohol, Ferric Chloride Hexahydrate, & Hydrochloric Acid)

UN2924

PG II

Hazard class 3, 8

Section 15 - Regulatory Information

Canada Regulatory Information

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.

Section 16 - Additional Information

SDS Creation Date: 6-12-19

Revision #1: 11-1-23

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Rowley Biochemical, Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages, howsoever arising, even if Rowley Biochemical, Inc. has been advised of the possibility of such damages.